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ABSTRACT

The communicative behavior of nine severely and multiply handicapped children (5-9 years old) was analyzed over a 6-month period. Videotapes and photographs of Ss' behavior in differing situations indicated that they could communicate some of their wants and needs. When introduced to large photographs of the items which had prompted responses, many Ss were able to respond, and in some cases, call for pictures of their mother and father. (CL)

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Very Early Communication in Severely Subnormal Children

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This paper examines some of the very early attempts at communication by some SSN children who were found to be virtual non-communicators at the start of the project. The study of the children's present communication forms the first part of a research project aimed at producing practical pedagogical materials to help develop the communicative skills of such children.

Much of the evidence concerning the language development of retarded children has tended to support the hypothesis that retarded children develop language functions in the same sequence as 'normal' children but with increased spacing between major developmental landmarks, and with a termination of development at a stage (or stages) below that attained by 'normal' children. (See Lackner 1968, Lenneberg et al 1964 etc.). The evidence from severely subnormal children is much less positive, and anyway is much less in quantity. A study of such children throws into highlight some of the very early stages in the development of the means of communication. But just as it has been argued that it is misleading to place the retarded child into the language development pattern of the normal child for assessment purposes (Rogers 1975), it is equally debatable whether the level of the disabilities of SSN children enable comments about their development of communication to be applied, except in the most general way, to more normal children and their language and communicative development. Baumeister (1967) has discussed some of the difficulties involved in comparing the behaviour of normal and subnormal children and he argues that a comparison is most appropriately made when performance in task - or experimental - variable situations is judged.

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The Project

This project concentrated on observing nine children in a special school. The category SSN was normally applied to the children at the school, but the range of the children's abilities was nevertheless wide and this project concentrated on children at the very bottom of the ability range in the school. All the children were in the special care class of the school.

The research project itself falls naturally into two parts. The first part was an observational study of the children; very simply, the aim of the first part was for the observer to soak himself in the special care room and try to answer the question: Do the children communicate? and if they do communicate either with adults or with their parents or amongst themselves, what is it that they do to communicate and by what means? The second part of the project is an attempt to develop materials suitable for the fostering of the communicative abilities of the children. Clearly the detailed observations produced in the first part of the project will be the raw material of the second part.

The three dates used in this project, time 0, time 1, and time 2, were roughly three months apart and were preceded in each case by an intensive period of two weeks during which time each child was observed as it went about its life in the special care classroom. The uneveness of the time interval between each date was caused by the various absences of the children; the time was made flexible so that at every stage the maximum number of children was present during that week. In the event the communicative behaviour of each child was able to be logged within a school week: the time dates refer to a school week.

The Intensive Observation Period

Each child was observed for a complete school day and he or she was also observed going home on the transport and at home with his or her family and brothers and sisters. The routine of the children was generally fairly well established at school particularly, but also at home.

Therefore each child was observed going through many of the same events as all the other children. In particular each child was observed on arrival at school, being taken to the classroom, sitting down and doing some play, toileting, elevenses, lunchtime, toileting, rest in the afternoon, musical activities, getting ready for home, going on the school bus, meeting mother at home, playing with brothers and sisters, having a meal at home.

Throughout all these activities one individual child was followed at a time. The main record of the child's behaviour was made on a video television recording, but this was supplemented by a taperecorder and notes made by the observer. Still photographs were also taken. The visual record of the children's behaviour was an essential part of the project, because the vast majority of the children's communicative behaviour was not vocal.

An attempt was also made to observe the change in certain physical reactions such as heartbeat, galvonic skin reaction, breathing rate and cries. The data thus collected was not particularly revealing because it was always unclear quite what baseline of each child was at any time, and it may have been that the fixing of the actual equipment at times upset the children, but other times did not. It has therefore been quite difficult to make any comparisons between the data on physical reactions collected at time one and time two and thus this data does not form part presented in this paper.

Gross reactions were noted such as whether the child was interesting or not, whether there was an immediate change in the person's own reaction and so on. No figures are presented quantifying this data because of the difficulties of a baseline response.

The two weeks intensive observation of each individual child was found to be essential before the actual data was collected as it took this length of the week of the time date. This was for the following reasons:

(1) The children with this level of handicap in this unit always behaved amongst themselves. This meant that each individual child had his own way of doing things and this had to be observed on each and every child over an extended period of time.

(2) The range of the individual child's behaviour was enormous. This meant that it was necessary to spend time on each child getting to know what were the possible limits of the behaviour of that child.

(3) Given that after an intensive time of observing the child, and the fact that the children had a wide range of possible behaviours, the actual behaviour of a child, say, in being presented with the task was at times very random. Sometimes he responded well to being communicated, sometimes he did nothing, sometimes he responded 'inappropriately'.

The behaviour of each child had to be mapped out individually so that the range and possibilities and limits of 'inappropriate' responses could be seen as a whole. Suppose information was being collected about how the child behaved when he was given a word, then it was necessary to observe the child over a number of weeks in a number of different presentations so that the dimensions of his range of responses and the dimensions of his range of inappropriate responses could be judged by those observations.

During the two weeks intensive observation a profile was built up of each child and based upon the information thus gained, it was possible to make a judgement as to what would be reasonable average performance in the week when the information was to be collected and tabulated. So that the evidence presented in the tables here as representing behaviour at time 0, time 1 and time 2, is evidence based upon a knowledge of the children's range of possible behaviours.

The Children's Teachers

The children had one experienced and qualified teacher in charge of theis special care class, and they also had two full-time Welfare Assistants devoted to them. In practice, however, it was not always possible to distinguish between the role of the teacher and the roles of the Welfare Assistants as they went about their daily activities with the children. Each child was dealt with on the individual basis generally with the Teacher and one Welfare Assistant present.

The Children

The nine children selected for the project had been present at the school since at least the previous September before the project started. They suffered from a wide range of physical and mental disabilities. The major findings of each child's aetiology are listed below; but it is necessary to point out that in every case the classification is an interaction between a number of different factors with the main factor only listed.

	Age at start of project	Major Findings
James (1)	5.7	encephalitis
James (2)	5.2	congenital Rubell a syndrome
James (3)	6.9	Down's syndrome
Sharon	7.7	cerebral palsy
Daren	9.4	cerebral palsy
Susan (1)	9.9	unclassified but probably multiple
Terry	7.7	gargoylism
Mary	6.8	meningitis
Susan (2)	7.2	Down's syndrome

The Abilities of the Children

At the start of the project none of the children was able to walk or to sit upright without aid. Each was incontinent. This meant the great part of the day was taken up with the toileting, cleaning of the children. As the children were not able to feed themselves the feeding and the giving of drink to the children also occupied a great part of the day. As the day was generally organized around these events, the routine of the classroom was well-organised and relatively unchanging. But as these activities generally occupied at least two adults in dealing with one child, there were times in the day when the rest of the children

The Abilities of the Children contd

were left on their own to play. It was at these times that the teacher managed to get in ten minutes concentrated play or "teaching".

Towards a definition of communication

It is an extremely difficult task to contrast and compare the communicative behaviour of one SSN child either with other children in the same group or with other groups of SSN children. Apart from the range of the possible responses, which has already been discussed, there is the problem of attempting to define just what would constitute communicative behaviour in the children.

During the intensive observation periods with the children it soon became clear that in order to categorise behaviour as communicative the following questions had to be answered:

A. Did we learn something about the child's needs, wants, desires, state of mind from some of the child's behaviour?

B. Could it thus be said that the child was communicating with us?

1. Who initiated the sequence, or sub-sequence of communicative behaviour?
2. Was the child's behaviour a response to some external stimulus?
3. Was the child's behaviour a response to an internal stimulus, or state of body or mind?
4. Was the behaviour random?
5. Or was it repeated sufficiently often together with a stimulus or event?
6. Did the behaviour form part of a larger sequence which was, in some way, systematic?
7. What were the views of the adult caretakers and/or the children's parents?

The significance of questions one, two and three was to see who actually started the communication. Most of the time the children communicated by responding in a particular way to an external stimuli. This rudimentary form of an analogue communicative system was able to be refined by some children during the period of the project in two directions: some children were able to respond to one or more of the secondary stimuli with which they were presented, and a few children were able to initiate on their own behalf some communicative behaviour. The latter was taken as the major differentiating criterion in describing the children's communication.

The importance of questions four, five and six was to consider whether the physical movements of the children could be placed into a system of communication giving evidence of regularity, repetition of known components, and some degree of permanence. This area of the work of the project is the most problematical: the possible emergence of a system of physical communicative movement (deliberately not here called non-verbal) is the most critical point to answer but unfortunately very little work exists which considers the physical communicative movements of 'normal' children, so that no real comparisons can be made. Work is continuing on an examination of the movements of SSN children until more insights are gained for a general theory from the evidence of more 'normal' children who may have a more easily observed and defined system.

Question 7 is of a different order from that of the other questions, and was asked because in discussion with the adults in charge of the children it soon became clear that the adults believed that all the children, with the exception of James (2) at the beginning, did communicate. Again, the problem is to define communication. The adults in charge of the children reported that they often 'knew' what the children wanted. But the fact

	PRIMARY STIMULI																						SECONDARY						
	Mother			Father			Brother Sister			Meal Time			Different Food			Own Chair			Toy			Mother			Father			
TIME	0	1	2	0	1	2	0	1	2	0	1	2	0	1	2	0	1	2	0	1	2	0	1	2	0	1	2	
JAMES(1)	+	+	+							+	+	+			+	+	+	+						+				
JAMES(2)		+										+			+													
JAMES(3)	+	+	+	+	+	+			+	+	+	+		+	+		+	+	+	+	+		+	+			+	
SHARON	+	+	+		+		0	0	0		+	+		+	+	+	+	+			+			+				
DAREN	+	+	+	0	0	0			+	+	+	+		+	+			+	+	+	+		+	+	0	0	0	
SUSAN(1)	+	+	+	+	+	+		+	+	+	+	+	+	+	+		+	+	+	+	+		+	+		+	+	
TERRY	+	+	+	+			+	+		+	+	+			+			+			+			+				
MARY		+					0	0	0		+	+	+		+			+			+							
SUSAN(2)	+	+	+	+	+	+		+	+	+	+	+	+	+	+	+	+	+			+			+			+	

TABLE I

COMMUNICATION BY RESPONSE

that the adults were able to anticipate, and to be aware of the needs of the various children in the special care class, was probably as much a result of the adult constant caring concern for their children and the very strongly held belief that the children could communicate. The adults also firmly believed that the children had the need and the desire to communicate their desires, needs, emotions and wants. This was as much an act of faith as a fact. But in the very close confines of a special care classroom these acts of faith were sometimes more important than facts. The adult belief in the ability of the children to communicate was paramount.

Secondary Stimuli

An attempt was made as the project developed to introduce secondary stimuli to the children. This was done by producing large well-done photographs of the items which the children had already reacted to: such as their mother, their father, their brother or sister or their particularly well-loved toy. The progress that the children made in recognising or reacting to this secondary stimuli is reported in Table I. It is interesting to note, however, that although many of the children were able to respond (and in some cases to 'call' for) the photographs of their mother and father, none of them made any progress with any of the other photographs.

The Range of Communicative Behaviour

The discussion in this section refers to table I.

At time 0 it can be seen that most children had some responses which were judged to be communicative so that they were able to be seen as communicating. In the case of James (2) at time 0 there were no responses which were deemed to be communicative. By this it is meant that at no time was it possible to isolate one particular response from the whole range of random and involuntary

TABLE II

INITIATORY COMMUNICATION

	Toy			Toilet			Drink			Mother			Father		
TIME	0	1	2	0	1	2	0	1	2	0	1	2	0	1	2
JAMES (3)	+					+									
SUSAN (1)			+	+	+	+		+				+			+
TERRY												+			
SUSAN (2)				+	+	+									

movements that James made and say that this was a response to a particular stimulus. It ought to be noted, however, that James (2) was the youngest of all the children and he had been in the school since the previous September only. The teacher freely admitted that she "understood" James II the least of all her charges and that what he wanted at any time was not yet understood or known by her or her colleagues.

Mary at time 0 only responded to food; this response was not yet fixed over her behaviour before every meal as it was presented. It was not possible to see any other responses fixed to the other remaining stimuli. Looking at table II for time 0 it is possible to see that three children, James (3), Susan (1), and Susan (2) were able to initiate a communicative sequence. In the case of the two girls, the communicative sequence referred to the wish to be toileted. James (3), initiated a communicative sequence about his favourite toy which was a mobile hanging in the corner of the room; he was able to indicate that he wished to be wheeled so that he could just touch it. Susan (1) would cry out [ɛ̌ ɛ] before she wanted to go to the toilet; Susan (2) would show obvious signs of distress in her face and generally squiggle about in her chair before she wanted to go to the toilet; James (3) would wave his hands in a particular way that he actually did when he played with the mobile, to indicate that he wished to be within contact of the mobile.

As it happens, then, these three children used the three means of initiatory communicative behaviour: Susan (1) used a vocal call which was regular and which was fixed to a particular request. Susan (2) illustrated by signs of distress a particular need that she had at that time. James (3) imitated the movements of his hand that he actually did when playing with the toy and this very soon became a request to play with the mobile itself.

At time 1 it can be seen from table I that there is a very slight improvement in the communicative abilities of the children in the three-month period from time 0. James (2) has at this stage developed one communicative response and Mary has doubled her responses from 1 to 2. It was at this stage that for the first time the children were introduced to the secondary stimuli of photographs of their mother and father: the responses of the children differ. Susan (1) and Susan (2) both responded to the pictures of their mother and their father. Other children responded to one photograph, in every case to the mother first before the father. Some children did not respond to the photographs at all.

On the initiation of communicative behaviour, Susan (1) had developed the call [ɪ] , to indicate that she wanted a drink. No other child had developed in the interval of time any further initiatory communicative behaviour.

At time 2 there can be seen a steady improvement in the communicative behaviour of the children. In particular James (2) doubles his responses to two and Mary may be seen to have four responses out of the eight possible for her.

In initiatory communicative behaviour, Susan (1) had developed a liking for playing with a shallow bowl filled with warm water and she was able to signal her enjoyment in this by cries of laughter; she was also able to give a call [ɹə], to indicate that she wished to play with the water. Terry by this stage had also developed a call, [ʊ], to indicate that he wished to be toileted. There were no further developments in Susan (2).

In response to the secondary stimuli there was a very interesting development here. First of all other children their ability to respond to this secondary stimulus either by adding the father to their list, or by being able to respond to the photograph of their mother. But the most interesting

development was that Susan (1) was able to call for both photographs; she had a separate call to ask for the photograph of her mother and another call for the photograph of her father. The calls were respectively for her mother, [j ə] and her father, [θoː].

It is interesting to note that she was satisfied by being given the photograph in each case and apparently she did not expect to have her mother or her father at school at that particular moment. So that there is here a case of the child calling for the secondary stimulus.

Terry at this time also had developed a call, [dɹ], for the photograph of his mother. He did not have an associated call for his father. Terry appeared to be in a similiar situation to that of Susan (1), in that he did not expect to see his mother when he called. To check out this last point in respect of the mothers of both Susan and Terry, these two ladies were invited to the school and shown to their children and then disappeared for five minutes or so. This little experiment was repeated five or six times in the week and on only one occasion did Susan (1) call for her mother using the call that she had used for her mother's photograph. The evidence, thus, was not entirely clear whether the children associated the photograph as being an object in itself or a representation of the real thing.

Discussion

This project involved spending a great deal of time in the homes of the children and working with their parents. An interesting and rewarding aspect of the work was to discuss the child with it's parents. The one question that every parent asked was 'will my child acquire a basic language?' The way in which this question is posed demands an answer no. It is very unlikely that these children will acquire "language" if we take as a pre-requisite of language a certain level of structure.

What is possible is that in time these children will acquire an ability to name by some vocal means certain items which feature prominently in their life, they may be able to call for things that they want. They may even be able to express some wants and desires verbally. But a collection of single words used by themselves to call for individual items is not a language. An examination of the communicative patterns of these SSN children suggest that the mention of language or of prelinguistic or postlinguistic communication is not appropriate. Much of the work dealing with children who have been called SSN finds that the children do indeed have a language. For example Lackner (1968) analyses the language produced by retardates of certain mental ages and compares it with the language development of "normal" children. One of the children Lackner looks at, subject S W, had a mental age of 2.11 and a chronological age of 13.1 thus giving an I.Q. of 16.8. This particular child in his study had an MLU of 6.7. Clearly then children with I.Q.S as low as 17 acquire language. Lackner discusses some of the evidence from McCarthy (1954) and says that:

> "there were no striking differences in sentence length for a retarded of a given mental age and a gifted child of that chronological age. However, by the age of 4½ the gifted children have surpassed the most advanced retard. It must be noted that if normal children and retarded children of the same chronological age were compared, the normal children would have longer sentences at all ages". (p.305)

But, as Zeaman (1965) has pointed out:

> "If you match for C.A., then M.A. is out of control. If you match for M.A., then C.A. is necessarily out of control. If you assume C.A. is not a relevant variable and match for M.A., then other differences appear out of control. Length of institutionalisation, home environments, previous schooling, tender loving care, and socio-economic status are factors likely to be different for retardates and normals".

The sheer lack of any <u>extensive systematic means of communication</u>, be it verbal, non-verbal or pre-linguistic or whatever, marks the children of this study out from most other children. Evidence from other studies suggests that the SSN children in this study are at the very bottom end of the ability range.

For example, Fenn (1974) reports that retarded children can learn to use the Paget-Gorman sign language systematically - even using it for egocentric speech. The work of Professor Bruner's Team on Pre-linguistic stages of communication shows that children do develop a system of communication with it's rules and it's organising principles very early on in life. The extremely low level of ability of the SSN children in this study is indicated by their relative inability to acquire these very basic communication devices which more normal children acquire in their first year.

The children in this study, then, are different from other children because they do not develop a language as it is generally taken to be in normal children. Some of the SSN children studied will probably never acquire language skills beyond those of naming, or calling for, items highly relevant to them and which they can see. How true is it to say, then, that what is here being examined is pre-linguistic communication? Or how useful is it to say that the children rely heavily on certain non-verbal means or communication? Or even that they communicate?

The need to rely on terms from linguistics serves to emphasise the differences that these SSN children have from other more normal children; this in turn hinders the emergence of the view that SSN children have a system of communication of their own which needs to be described in terms other than in (pre- or non-) linguistic terms.

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